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10/649,953	08/28/2003	Katsuto Sakamoto	500.37490CX1	7146

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EXAMINER
DASTOURI, MEHRDAD

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17-19* is/are allowed.

6)☒ Claim(s) *20-22* is/are rejected.

7)☒ Claim(s) *23-25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☒ Certified copies of the priority documents have been received in Application No. <u>09/379,365</u>.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/5/2003*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 23-25 are objected to because of the following informalities:

In Line 28 (last line0 of Claim 23, "screen" should be corrected to "screen." to

include the period indicating the end of the claim. Claims 24 and 25 depend on Claim

23.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Liou et al (EP 0 780 776A1) in view of Kiyama (JP 10-126721).

Regarding Claim 1, Liou et al disclose a method of detecting local features of

video comprising:

extracting static images from a video made up of a plurality of static images

(Figures 1 and 7, Data Acquisition; Page 5, Lines 55-59, Page 6, Lines 1-14);

calculating a plurality of different feature quantities of each of the static images

(Figures 1 and 7; Page 6, Lines 15-55, Page 7, Lines 1-28);

calculating respective differences in the feature quantities between the static images and their preceding or subsequent static images (Figures 1 and 7, Difference Metric Collection; Page 6, Lines 15-55, Page 7, Lines 1-28);

detecting static images according to the respective difference in the feature quantities between the static images and their preceding or subsequent static images (Figures 1 and 7; Page 7, Lines 29-59 to Page 10, Line 2);

registering the detected static images with detected times and the feature quantities in a list in order of detection (Page 10, Lines 9-48; Page 17, Lines 6-10);

checking position of the list where the detection time interval between two adjacent static images in the list is equal to or bigger than a predetermined value (Page 17, Lines 6-10; Page 10, Lines 9-28);

dividing the list at the checked positions into groups (Page 10, Lines 9-28); and

displaying the detected static images (Figure 15; Page 18, Lines 5-10. Each of the scenes in Window 1208 is representative of static images or a change in video frames.).

The detected static images inherently include feature quantities such as contrast and intensity of the pixels. However, Liou et al do not disclose the detected static images together with the feature quantities by which the static images are detected on respective areas on a screen.

Kiyama discloses an image information generating device that indicates a scene change in dynamic images including displaying a detected static image together with respective feature quantities by which the static images are detected displayed on

respective areas on a screen. (Figure 3, Static Image with Histograms H_x (x) and H_x (y);

Figures 4 and 5; Paragraphs 0014-0016; Abstract, Problems to be solved and Solution.

As it is well known in the art, the vertical axis of the histogram depicts the number of

pixels and the horizontal axis depicts the intensity of the pixels in the image.).

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to modify Liou et al invention according to the teachings of Kiyama

to display the detected static images together with the feature quantities by which the

static images are detected on respective areas on a screen because it will provide an

enhanced representation of the video frame differences. The illustrated feature quantity

difference will expedite browsing and editing of video materials for more accurate

detection of a point of change in video frames.

Regarding Claim 21, Liou et al further disclose a method of detecting local

features of video according to Claim 20, wherein the plurality of different feature

quantities include a brightness of the static image (Figures 1 and 7; Page 6,18-30.).

4.   Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liou et

al (EP 0 780 776A1) further in view of Kiyama (JP 10-126721) and Tada et al (U.S.

5,572,728).

Regarding Claim 22, Liou et al further disclose a method of detecting local

features of video according to Claim 2, wherein the plurality of the feature quantities

include a function of a red component in the static image (Figures 1, 7 and 15; Page

646-57, Page 7, Lines 1-9; Page 5, Lines 15-16. Liou et al teachings are applicable to

color images as well (Figure 15; Page 5, Lines 15-16). A color histogram of an image is

obtained by dividing a color space (e.g., RGB) into discrete image colors (bins) and counting the number of times each discrete color appears by traversing every pixel in the image. These calculated number of red, green and blue colored pixels have been utilized for determining the difference between the color histograms of the first and the second static images.).

Liou et al and Kiyama do not explicitly disclose utilizing a percentage of a red component in the static image as a feature quantity. Having the number of red pixels and the total number of the colored pixels, the percentage of a red component in the static image will be easily calculated. In image processing, in a multi-dimensional feature space, the percentage of a feature quantity has been routinely utilized in lieu of the total number of that feature (Official Notice).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Liou et al and Kiyama combination to use the percentage of the red component in a static image as a feature quantity because utilizing percentage values will reduce computational time and will expedite video browsing and editing for detecting the point of change in video images.

Allowable Subject Matter

5.   Claims 17-19 are allowed.

Claim 17 of the instant invention recites a method of detecting local features of a video, comprising:

detecting static images constituting flicker scene according to the respective differences in the feature quantities between the static images and their preceding or subsequent static images;

registering the detected static images with detected times and the feature quantities in a list in order of detection, extracting a first static image registered on a top of the list and a second static image registered after the first static image;

when the difference between the first static image detection time and the second static image detection time is less than a predetermined value, adding the first and second images to a first group;

when the difference between the first static image detection time and the second static image detection time is equal to or bigger than the predetermined value, adding the second image to a second group;

displaying the static images belonging to the first group with the feature quantities by which the static images are detected on a first area on a screen: and

displaying the static Images belonging to the second group with the feature quantities by which the static Images are detected on a second area on a screen.

The features identified, in combination, are neither discussed nor suggested by the prior arts of record.

Claims 18 and 19 depend on Claim 17 and are therefore allowable.

6.   Claims 23-25 recite the apparatus for implementing the method Claims 17-18, and would be allowable if amended to overcome the minor informalities set forth in the Office Action.

Other prior art cited

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,177,513 to Saito;

U.S. Patent 5,434,678 to Abecassis;

U.S. Patent 5,568,275 to Norton et al.;

U.S. Patent 6,192,183 to Taniguchi et al.

Request for Interview

8.   The Examiner called Mr. Paul J. Skwierawski on September 9, 2004, concerning the request for an interview prior to first-action renewed. It has been concluded that no interview is required at this stage.

Contact Information

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

MEHRDAD DASTOURI
PRIMARY EXAMINER

Mehrdad Dastouri
Primary Examiner
Group Art Unit 2623
September 15, 2004